

PHILIPPINE PATENT (19)

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[54] Title: PROCESS FOR THE PREPARATION OF HEATSTABLE POWDERED COCONUT MILK

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[73] Assignee(s): NONE

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Coconut Milk

[56] Reference(s) Cited and/or Considered:

Coconut Aqueous Processing 2nd Edition- Robert Hagenmaier

[57] A B S T R A C T

The present invention relates to an improved process for the preparation of spraydried heatstable powdered coconut milk. In the present process, the deliquescent nature of the powdered milk is eliminated by the separation of the aqueous skim milk portion from the cream, stabilizing the cream, homogenizing at a pressure of about 2000 psi and spray drying at a temperature of about 75°C.

BAD ORIGINAL



PROCESS FOR THE PREPARATION OF
HEATSTABLE POWDERED COCONUT MILK
AND THE PRODUCT PRODUCED THEREFROM

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ABSTRACT OF THE DISCLOSURE

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The present invention relates to an improved process for the preparation of spraydried heatstable powdered coconut milk. In the present process, the deliquescent nature of the powdered milk is eliminated by the separation of the aqueous skim milk portion from the cream, stabilizing the cream, homogenizing at a pressure of about 2000 psi and spray drying at a temperature of about 75°C.

5 The present invention relates in general to an improved food product. More particularly, it relates to an improved process for the preparation of a heatstable powdered coconut milk and to the product produced therefrom.

10 Prior to commercial production of powdered coconut milk, the main form of preserved coconut milk available to consumers is the liquid packed in the cans and subsequently sterilized. In this form, however, only a few brands could claim to be of good quality. Curdling or lumpiness resulting in unattractive appearance appears to be the major defect in such sterilized products. Tin cans are moreover, rather expensive. The relatively low-priced cans are usually also of low quality so that flaking off of their enamel coating and rusting occur contributing to deterioration of the product. To date, the inferior quality of canned coconut milk coupled with its non-competitiveness in terms of cost against fresh coconuts from which milk could be hand-pressed combine to make demand for the product limited.

25 The spraydrying of coconut milk overcomes the disadvantages cited above. The present applicant has had much success in the mass production and marketing of the spraydried product, a commodity

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now popularly known as either coconut cream or coconut milk powder.

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5 More recently however, there has been a need for a coconut milk product which retains smoothness in texture and appearance even when heated to temperature above 80°C. Such a heatstable material is desired in the preparation of pasteurized or sterilized coconut milk-based products as to the case of the innovative fruit-flavored coconut milk beverages. A non-curdling type of product is also favored in food-service institutions where visual appearance of food preparations is an important consideration.

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15 It is in recognition of this demand for heatstable coconut milk that the inventor has developed a new spraydried product with such quality.

20 DESCRIPTION OF THE INVENTION

It is therefore the object of this invention to provide an improved process for the preparation of a spray dried heatstable powdered coconut milk.

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30 Another object is to provide a spraydried heatstable powdered coconut milk product designed to serve as a source material for the preparation of good quality sterilized coconut milk and

cocomilk-based products, and as an ingredient in specialty food preparations.

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Other objects and advantageous features of this invention will become apparent after perusal of the detailed description given hereunder.

Accordingly, the improved process of the present invention comprises the steps of:

1. extracting coconut milk from fresh coconut milk, and then pasteurizing;

2. separating the cream from the aqueous portion of the milk, called skim milk, either by centrifuging or by letting the milk stand for at least 3 hours, after which the cream layer is recovered;

3. stabilizing the cream by the addition of sodium caseinate and maltodextrin;

4. homogenizing the resulting mixture and then spraydrying.

In the present improved process, sodium caseinate and maltodextrin are added at a ratio of about 1:2 and about 5 to 10% by weight based on the weight of the cream.

Homogenizing of the mixture is conducted at a pressure of about 2000 psi and spraydrying is at an outlet temperature of about 75°C.

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The essential feature of the present process as compared to the known method of spraydrying coconut milk resides in the separation of the aqueous skim milk portion from the cream before spray drying the latter. The inventor has found out that this step effects the removal of the heat-sensitive protein components which are water-soluble and of equal importance is the removal of most sugars and salts, components which make for the deliquescent nature of coconut milk powder.

The resultant product exhibits enhanced qualities when compared to the regular coconut milk powder. Heatstable coconut milk base powder when reconstituted, does not curd or form a gel at sterilization temperatures of 120°C or higher. Hence it is best suited in applications where the product undergoes high temperature heating whether by canning or by UHT technology. As a powder, it has an improved keeping quality. This is a result of substantial reduction in the amount of sugars, mainly sucrose, and minerals, mainly potassium salts, making the product less deliquescent. The powder is also found to have a better, smoother texture than the regular coconut milk powder.

In subsequent development trials, the product is used as a raw material for making canned liquid coconut milk and cocomilk-fruit drink/punch using the procedures described below:

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1. For making liquid coconut milk, heatstable coconut milk base was reconstituted with water and sodium citrate in the ratio 23 parts powder, 77 parts water and 0.22 parts sodium citrate. The reconstituted milk after being homogenized was sterilized at 124°C for 45 minutes without formation of lumps. Improved whiteness of the product was obtained with the addition of 22 ppm sodium metabisulfite.

2. The specific formulations for making cocomilk-fruit beverages/punch depend on the particular fruit juices utilized. The process, however, basically comprises reconstitution of the heatstable coconut milk base, mixing with a fruit juice or fruit puree and/or liquor, addition of sodium citrate, and sodium metabisulfite to retard browning, and homogenizing. The mixture may then be sterilized in cans or by UHT technology. The product may be produced as a single-strength drink or in concentrated formulation.

The present invention will be further described in the following specific embodiment which should not be construed as a limitation thereof.

Example No. 1

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Freshly-grated coconut meat was passed through a twin-screw press to produce liquid coconut milk, which was pasteurized at 72°C. The pasteurized milk was diluted with an equal weight of water at 95°C, next, 300 kg of diluted milk was allowed to separate under the influence of gravity for 3 hours in an insulated tank, after which the lower 50% was drained out and discarded, leaving 150 kg of cream containing 36% moisture content. To the cream was added 2.5 kg sodium caseinate and 5.0 kg maltodextrin. This mixture was spraydried at 75°C outlet temperature to give a powder containing 75% oil content.

Example No. 2

Pasteurized coconut milk was prepared as in Example No. 1. This milk, not diluted this time with water, was passed through Alfa Laval separator Model MAB-104B-20 to separate cream from skim milk. To 100 kg of cream was added 2 kg sodium caseinate and 8.0 kg maltodextrin. This mixture was homogenized at 2000 psi. It was atomized through a mini-SDX spray nozzle and dried in a box-type spray dryer at approximately 75°C outlet temperature. The product, has 0.6% moisture and 83% oil content.

CLAIMS

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Having now fully described my invention what
I claim and sought to be patented are:

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1. In a process for the preparation of
heatstable powdered coconut milk which comprises
the step of dehusking the coconut, separating the
coconut ~~milk~~ ^{meat} from the shell, paring the coconut
10 meat, washing and cutting the coconut meat,
extracting the coconut milk, sterilizing the
coconut milk, stabilizing and spraydrying, the
improvement which comprises separating the cream
from the aqueous skim milk portion, stabilizing
15 the cream by adding sodium caseinate and
maltodextrin, homogenizing the mixture at a
pressure of about 2000 kpsi and spray drying at a
temperature of about 75°C to obtain the heatstable
powdered coconut milk.

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2. The process fo claim 1 wherein the
separation of the milk from the aqueous skim milk
portion is by centrifuging.

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3. The process of claim 1 wherein the
separation of the milk from the aqueous skim milk
portion is by letting the milk stand for at least
3 hours.

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4. Heatstable powdered coconut milk product
prepared by the process according to claim 1.

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